Applied Magnetic Resonance 2011 vol.40 N1, pages 65-73

Magnetic Resonance and Optical Spectroscopy of Yb3+ in CsCaF3 Single Crystal: An Analysis of Distortions of the Crystal Lattice near Yb3+

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Abstract

A trigonal Yb3+ paramagnetic center in the CsCaF3 single crystal was studied by magnetic resonance and optical spectroscopy methods. The structural model of the complex and the empirical energy level scheme were established. The transferred hyperfine interaction parameters and the crystal field ones were determined. The crystal field parameters were used to analyze the lattice distortions in the vicinity of Yb3+ using the superposition model. © 2010 Springer-Verlag.

http://dx.doi.org/10.1007/s00723-010-0183-3